

Abstract of the Disclosure

Administration  $\beta$ -lactam compounds, including of inhibitors of certain bacterial peptidases have been found to provide significant neurotropic effects in warm-blooded vertebrates evidenced *inter alia* by anxiolytic and anti-aggressive behavior and enhanced cognition believed to be mediated by inhibition of neurogenic NAALADase and related enzyme activity.  $\beta$ -Lactam antibiotics and  $\beta$ -lactamase inhibitors have been found to exhibit potent NAALADase inhibition, and those compounds with blood brain barrier transport are effective inhibitors of neurogenic NAALADase with significant neuro-therapeutic effects.  $\beta$ -Lactam compounds are useful for treatment of numerous disease states associated with glutamate abnormalities. Therapeutic methods for using such compounds and their pharmaceutical formulations are described.

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